WHAT IS CLAIMED IS:

1. A catheter for the uniform delivery of fluid throughout an anatomical region, comprising:

an elongated tube having a closed distal end and a plurality of exit holes in side walls of said tube, said exit holes provided along a length of said tube defining an infusion section of said catheter, said tube being sized to be inserted into an anatomical region; and

an elongated member positioned within said tube, said member being sized so that an annular space is formed between said tube and said member, said member being formed of a porous material;

wherein said catheter is configured so that a fluid introduced into a proximal end of said tube will flow through said exit holes at a substantially uniform rate throughout said infusion section.

2. The catheter of Claim 1, wherein said member is concentric with said tube.

3. The catheter of Claim 1, wherein said member is not concentric with said tube.

4. The catheter of Claim 1, wherein said member is secured to said tube by a ring-shaped bond near the proximal end of said infusion section.

5. The catheter of Claim 1, wherein said member is secured to said tube by a ring-shaped bond generally midway between the proximal and distal ends of said infusion section.

6. The catheter of Claim 1, wherein said member is bonded to said tube at the distal end of said member.

7. The catheter of Claim 1, wherein said porous material has an average pore size within the range of .1 - 50 microns.

8. The catheter of Claim 1, wherein said porous material is Mentek.

9. The catheter of Claim 1, wherein said annular space has a radial width within the range of 0-0.005 microns.

10. The catheter of Claim 1, further comprising an air filter in the flow path of said tube.

11. A catheter for the uniform delivery of fluid throughout an anatomical region, comprising an elongated tube having a plurality of exit slots in side walls of said tube, said slots being provided along a length of said tube defining an infusion section of said catheter, said slots being oriented generally parallel to the longitudinal axis of said tube, said tube being configured so that a fluid flowing therein will flow through substantially all of said exit slots at a substantially equal rate.

12. The catheter of Claim 11, wherein said slots increase in length from the proximal to the distal ends of said infusion section.

13. A catheter for the uniform delivery of fluid throughout an anatomical region, comprising an elongated tubular member made of a porous membrane, said member sized to be inserted into an anatomical region, said membrane being configured so that a fluid introduced under pressure into an open end of said tubular member will flow through side walls of said tubular member at a substantially uniform rate along a length of said tubular member.

14. The catheter of Claim 13, wherein said porous membrane is formed from one of a group consisting of polyethylene, polysulfone, polyethersulfone, polypropylene, polyvinylidene difluoride, polycarbonate, nylon, or high density polyethylene.

15. The catheter of Claim 13, wherein said membrane has an average pore diameter less than 0.23 microns.

16. The catheter of Claim 13, further comprising a support defining at least one lumen and having at least one fluid passage exposed to said membrane.

17. A method of uniformly delivering fluid throughout an anatomical region, comprising the steps of:

inserting an elongated tubular member into said anatomical region, said tubular member being made of a porous membrane and being sized to be inserted through a subcutaneous layer surrounding said anatomical region, said membrane being configured so that a fluid introduced under pressure into an open end of said tubular member will flow through side walls of said tubular member at a substantially uniform rate along a length of said tubular member; and

introducing a fluid into an open end of said tubular member.

18. A catheter for the uniform delivery of fluid throughout an anatomical region, comprising:

an elongated support; and

a porous membrane wrapped around said support;

said support being configured so that at least one lumen is formed between said support and said membrane.

19. The catheter of Claim 18, wherein said porous membrane is configured so that a fluid flowing within said lumen will pass through a portion of said membrane at a substantially uniform rate throughout the surface area of said portion of said membrane.

20. The catheter of Claim 18, wherein the surface of said support includes interruptions such that when said porous membrane is wrapped around said support, said membrane forms a portion of the wall of said lumen.

21. The catheter of Claim 20, wherein said interruptions comprise a plurality of ribs extending radially from an axial center portion of said support, said ribs also extending longitudinally along a length of said support, said porous membrane wrapped around the outer edges of said ribs.

22. The catheter of Claim 18, further comprising a non-porous membrane wrapped around a portion of said support proximal to the portion of said support around which said porous membrane is wrapped, said non-porous membrane forming a portion of the wall of said lumen.

23. The catheter of Claim 18, wherein a first of said lumens is separated from a second of said lumens, so that a first fluid flowing within said first lumen and a second fluid flowing within said second lumen will remain separated for as long as said first and second fluids remain within said catheter.

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24. The catheter of Claim 23, wherein each of said lumens is separated so that a first fluid flowing within any of said lumens and a second fluid flowing within any other of said lumens will remain separated for as long as said first and second fluids remain within said catheter.

25. The catheter of Claim 18, wherein said support and porous membrane are substantially flexible.

26. The catheter of Claim 21, wherein said axial center portion contains an axial guide wire lumen adapted to slidably receive a guide wire.

27. The catheter of Claim 21, wherein said porous membrane is secured to the outer edges of said ribs.

28. The catheter of Claim 18, wherein the average pore diameter of said porous membrane is less than 0.23 microns.

29. A method of uniformly delivering fluid throughout an anatomical region, comprising the steps of:

inserting a catheter into said anatomical region, said catheter comprising an elongated support and a porous membrane wrapped around said support, wherein said support is configured so that one or more lumens are formed between said support and said porous membrane; and

introducing a fluid into the proximal end of at least one of said lumens, said fluid passing through said membrane into said anatomical region.

30. A method of manufacturing a catheter for the uniform delivery of fluid throughout an anatomical region, comprising the steps of:

forming an elongated support;

configuring said support so that when a sheet is wrapped around said support one or more lumens are formed between said support and said sheet; and

wrapping a porous membrane around said support so that one or more lumens are formed between said support and said membrane.

31. The method of Claim 30, further comprising the step of configuring said porous membrane so that a fluid flowing within any of said lumens will pass through a portion of said membrane at a substantially uniform rate throughout the surface area of said portion of said membrane.

32. The method of Claim 30, wherein said configuring step includes providing interruptions within the surface of said support such that when said porous membrane is wrapped around said support, said membrane forms a portion of the walls of said lumens.

33. The method of Claim 32, further comprising the step of configuring said interruptions to comprise a plurality of ribs extending radially from an axial center portion of said support, said ribs also extending longitudinally along a length of said support, said porous membrane being wrapped around the outer edges of said ribs.

34. The method of Claim 33, further comprising the step of forming an axial guide wire lumen within said axial center portion, said axial guide wire lumen adapted to slidably receive a guide wire.

35. The method of Claim 33, further comprising the step of securing said porous membrane to said outer edges of said ribs.

36. The method of Claim 30, further comprising the step of wrapping a non-porous membrane around a portion of said support proximal to the portion of said support around which said porous membrane is wrapped, said non-porous membrane forming a portion of the walls of said lumens.

37. The method of Claim 30, further comprising the step of configuring said support and porous membrane to be substantially flexible.

38. The method of Claim 30, further comprising the step of configuring said lumens to be fluidly separated from one another.

39. A catheter for the uniform delivery of fluid throughout an anatomical region, comprising:

an elongated tube including a plurality of exit holes along a length thereof; and

a tubular porous membrane concentrically enclosed within said tube, said tube and membrane defining a lumen.

40. The catheter of Claim 39, wherein said tubular membrane is configured so that a fluid flowing through said lumen will pass through the walls of said tubular membrane at a substantially uniform rate throughout the entire surface area of said membrane.

41. The catheter of Claim 39, wherein said lumen is configured so that a fluid flowing within said lumen will pass through the walls of said tubular membrane and exit said tube by flowing through substantially all of said exit holes at a substantially equal rate.

42. The catheter of Claim 39, wherein said tube tightly surrounds said tubular membrane.

43. The catheter of Claim 39, wherein said tube and said tubular membrane are substantially flexible.

44. The catheter of Claim 39, wherein said exit holes are provided throughout the circumference of said tube.

45. The catheter of Claim 39, wherein the average pore diameter of said tubular membrane is less than 0.23 microns.

46. A method of uniformly delivering fluid throughout an anatomical region, comprising the steps of:

inserting a catheter into said anatomical region, said catheter comprising an elongated tube including a plurality of exit holes along a length of said tube, and a tubular porous membrane concentrically enclosed within said tube, said tube and membrane defining a lumen; and

introducing a fluid under pressure into the proximal end of said lumen, said fluid passing through said membrane and said exit holes into said anatomical region.

47. A method of manufacturing a catheter for the uniform delivery of fluid throughout an anatomical region, comprising the steps of:

forming an elongated tube;

providing a plurality of exit holes along a length of said tube;

forming a tubular porous membrane; and

concentrically enclosing said tubular porous membrane within said tube, said tube and membrane defining a lumen.

48. The method of Claim 47, further comprising the step of configuring said tubular membrane so that a fluid flowing through said lumen will pass through the walls of said tubular membrane at a substantially uniform rate throughout the entire surface area of said membrane.

49. The method of Claim 47, further comprising the step of configuring said lumen so that a fluid flowing within said lumen will pass through the walls of said tubular membrane and exit said tube by flowing through substantially all of said exit holes at a substantially equal rate.

50. The method of Claim 47, further comprising the step of configuring said tube and said tubular membrane so that said tube tightly surrounds said membrane.

51. The method of Claim 47, further comprising the step of configuring said tube and tubular membrane to be substantially flexible.

52. The method of Claim 47, wherein said exit holes are provided throughout the circumference of said tube.

53. The method of Claim 47, wherein said tubular membrane has an average pore diameter less than 0.23 microns.

54. A device for the uniform delivery of fluid throughout an anatomical region, comprising an elongated catheter having a plurality of exit holes along a length of said catheter, said exit holes gradually increasing in size along said length of said catheter, wherein the largest of said exit holes is nearer to the distal end of said catheter than the smallest of said exit holes, so that a fluid flowing under pressure within said catheter will flow through substantially all of said exit holes at a substantially equal rate, said catheter being formed from a material that is non-reactive to anatomical systems.

55. The device of Claim 54, wherein said exit holes are provided throughout the circumference of said catheter.

56. The device of Claim 54, wherein the smallest of said exit holes has a diameter of at least 0.0002 inches and the largest of said exit holes has a diameter of at most 0.01 inches.

57. A method of uniformly delivering fluid throughout an anatomical region, comprising the steps of:

inserting an elongated catheter into said anatomical region, said catheter having a plurality of exit holes along a length of said catheter, said exit holes gradually increasing in size along said length of said catheter, wherein the largest of said exit holes is nearer to the distal end of said catheter than the smallest of said exit holes, said catheter being formed from a material that is non-reactive to anatomical systems; and

introducing a fluid under pressure into the proximal end of said catheter, said fluid flowing through said exit holes and entering said anatomical region, said fluid flowing through substantially all of said exit holes at a substantially equal rate.

58. A method of manufacturing a device for the uniform delivery of fluid throughout an anatomical region, comprising the steps of:

forming an elongated catheter from a material that is non-reactive to anatomical systems; and

providing a plurality of exit holes along a length of said catheter, said exit holes gradually increasing in size along said length of said catheter, wherein the largest of said exit holes is nearer to the distal end of said catheter than the smallest of said exit holes, so that a fluid flowing under pressure within said catheter will flow through substantially all of said exit holes at a substantially equal rate.

59. The method of Claim 58, wherein said providing step includes providing said exit holes throughout the circumference of said catheter.

60. A catheter for the delivery of fluid throughout an anatomical region, comprising:

a tube;

a tubular coil spring having a proximal end attached to a distal end of said tube; and

a stop closing a distal end of said spring;

said tube and said spring each defining a portion of a central lumen, said spring having adjacent coils in contact with one another so that fluid within said spring and below a threshold dispensation pressure is prevented from exiting said lumen by flowing radially between said coils, said spring having the property of stretching when the fluid pressure is greater than or equal to said threshold dispensation pressure and permitting the fluid to be dispensed from said lumen by flowing radially between said coils.

61. The catheter of Claim 60, wherein said spring is configured so that the fluid between the coils is dispensed substantially uniformly throughout the length and circumference of a portion of said spring.

62. The catheter of Claim 60, wherein said catheter further includes a lumen through said stop defining a guide wire lumen for use with a guide wire.

63. A method of delivering a fluid to an anatomical region, comprising the steps of:

introducing a fluid into an open proximal end of a tube;

allowing said fluid to flow into a tubular coil spring within an anatomical region and having a proximal end attached to a distal end of said tube so that said tube and spring each form a portion of a lumen, said spring having a stop closing a distal end of said spring, said spring having adjacent coils in contact with one another so that said fluid within said spring and below a threshold dispensation pressure is prevented from exiting said lumen by flowing radially between said coils, said spring having the property of stretching when the fluid pressure is greater than or equal to said threshold dispensation pressure and permitting the fluid to be dispensed from said lumen by flowing radially between said coils; and

bringing the fluid inside of said spring to a pressure greater than or equal to said threshold dispensation pressure;

wherein said fluid exits said lumen by flowing radially between said coils.

64. A method of manufacturing a catheter for the delivery of fluid throughout an anatomical region, comprising the steps of:

providing a tube;

attaching a proximal end of a tubular coil spring to a distal end of said tube so that said tube and said spring each define a portion of a central lumen, said spring having adjacent coils in contact with one another so that fluid within said spring and below a threshold dispensation pressure is prevented from exiting said lumen by flowing radially between said coils, said spring having the property of stretching when the fluid pressure is greater than or equal to said threshold dispensation pressure and permitting the fluid to be dispensed from said lumen by flowing radially between said coils; and

attaching a stop to the distal end of said spring.

65. A catheter for the delivery of fluid throughout an anatomical region, comprising:

a distally closed tube, a length of said tube defining an infusion section of said tube, said infusion section having a plurality of exit holes in a side wall of said tube; and

a tubular coil spring concentrically enclosed within said infusion section so that a lumen is defined within said tube and said spring;

said spring having adjacent coils in contact with one another so that fluid within said lumen and below a threshold dispensation pressure is prevented from exiting said lumen by flowing radially between said coils, said spring having the property of stretching when the fluid pressure is greater than or equal to said threshold dispensation pressure and permitting the fluid to be dispensed from said lumen by flowing radially between said coils and through said exit holes.

66. The catheter of Claim 65, wherein said spring is configured so that the fluid between the coils is dispensed substantially uniformly throughout the length and circumference of a portion of said spring and thereafter flows through substantially all of said exit holes.

67. The catheter of Claim 66, wherein said exit holes are substantially equal in size so that the fluid flows through said exit holes at a substantially equal rate.

68. The catheter of Claim 65, wherein said spring and said tube are in contact along a substantial length of said spring.

69. A method of delivering a fluid throughout an anatomical region, comprising the steps of:

inserting an infusion section of a tube into an anatomical region;

introducing a fluid into a proximal end of said tube, a length of said tube defining said infusion section, said infusion section having a plurality of exit holes in side walls of said tube and concentrically

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enclosing a tubular coil spring, a lumen being defined within said tube and spring, said spring having adjacent coils in contact with one another so that fluid within said lumen and below a threshold dispensation pressure is prevented from exiting said lumen by flowing radially between said coils, said spring having the property of stretching when the fluid pressure is greater than or equal to said threshold dispensation pressure and permitting the fluid to be dispensed from said lumen by flowing radially between said coils and through said exit holes;

allowing said fluid to flow into said spring; and

bringing the fluid within said spring to a pressure greater than or equal to said threshold dispensation pressure;

wherein said fluid is dispensed from said lumen by flowing radially between said coils and through said exit holes.

70. A method of manufacturing a catheter for the delivery of fluid to an anatomical region, comprising the steps of:

providing a distally closed tube, a length of said tube defining an infusion section of said tube, said infusion section having exit holes in side walls of said tube; and

inserting a tubular coil spring concentrically into said infusion section, a lumen being defined within said tube and spring, said spring having adjacent coils in contact with one another so that fluid within said lumen and below a threshold dispensation pressure is prevented from exiting said lumen by flowing radially between said coils, said spring having the property of stretching when the fluid pressure is greater than or equal to said threshold dispensation pressure and permitting the fluid to be dispensed from said lumen by flowing radially between said coils and through said exit holes.

71. A catheter for the delivery of fluid throughout an anatomical region, comprising a tube having a plurality of exit holes in a side wall of said tube, said tube being distally closed, said exit holes being sized so that all of said exit holes form a flow-restricting orifice.

72. The catheter of Claim 71, wherein said exit holes are equally sized so that fluid dispensed from said tube flows at a substantially equal rate through all of said exit holes.